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ABSTRACT

This study focuses on the consequences of immersion experience as a means of developing second language skills. The students involved are 13 to 14 years of age, finishing grade 7 in the public school system. Two forms of immersion are compared, "early" and "late." Early immersion means that students had followed an immersion program from kindergarten on, while late immersion means that students had followed a French-as-a-second language program during elementary school, and taken a one-year French immersion program at grade 7. An analysis of the comparative abilities of the two groups leads to the general conclusions that there were differences in second language proficiency between early and late immersion students. These differences appeared on tests of reading, writing, speaking and listening where the early immersion students generally performed better than the later immersion students. However, neither group of students performed at the same level as the francophone students. (Author)

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ALTERNATIVE FORMS OF IMMERSION FOR SECOND LANGUAGE TEACHING

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ABSTRACT

This study focuses on the consequences of "immersion" experience as a means of developing second language skills. The students involved are 13 to 14 years of age, finishing grade 7 in the public school system. Two forms of immersion are compared, "early" and "late." Early immersion means that students had followed an immersion program from kindergarten on, while late immersion means that students had followed a French-as-a-second language program during elementary school, and taken a one-year French immersion program at grade 7. An analysis of the comparative abilities of the two groups leads us to the general conclusions that there were differences in second language proficiency between early and late immersion students. These differences appeared on tests of reading, writing, speaking and listening where the early immersion students generally performed better than the later immersion students. However, neither group of students performed at the same level as the francophone students.

April, 1976

ALTERNATIVE FORMS OF IMMERSION FOR SECOND LANGUAGE TEACHING[1]

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In "early" French immersion programs, an English speaking child receives all of his kindergarten and grade 1 instruction in French while attending an English school with English classmates. In grades 2 or 3, English is gradually introduced into the program until at grade 4 on and through grade 6 approximately half of the instruction is in French and half in English.

Evaluations of early immersion programs have consistently shown that participating pupils develop academically, cognitively and linguistically very much like their anglophone agemates who are being educated in the more traditional English programs (see, for example, Bruck, et al., 1975; Edwards, 1975). Furthermore these evaluations have documented the degrees of French proficiency attained by the students (see, for example, Spilka, 1975). Overall, while the pupils would not be mistaken for francophones, they have acquired a very high level of communicational proficiency in the second language which allows them to function in a broad range of academic and social situations.

Although early immersion programs appear to be very successful in producing a high degree of functional proficiency in French, they are certainly not the only possible alternative for developing such skills. Other approaches might be devised that are just as efficient and possibly more easily administered. At least, alternatives must be worked out for those who have missed out on the opportunity to attend early immersion programs.

One possible alternative is the one-year immersion programs that are becoming relatively popular in Canada. In these programs English-speaking children who have received all prior educational instruction in English are given, at one grade level (for example, grade 4 or 7), most of their school instruction in French, a "second" language. After the immersion year their education is continued in English. Evaluations have recently been conducted for several of these programs--at the grade 4 level by Cziko, (1975); Buteau & Gougeon, (1973); and at the grade 7 level by Bruck, Lambert & Tucker, (1975); Genesee, Morin & Allister, (1974); Genesee & Chaplin, (1975); and Swain, (1974).

The general aim of one-year programs is to help students attain a reasonable degree of proficiency in French, although the level and type of proficiency have never been explicitly

stated. Some educators expect these programs to promote well developed receptive skills in French (i.e., reading, oral comprehension) while others expect as well a high level of proficiency in speaking and writing the language. Still others believe that, because the students are more mature, the one-year immersion program might well bring students' language skills up to the same levels as those of their agemates who have attended early immersion programs.

The one-year immersion programs, then, present an interesting alternative in their own right, and questions can now be asked about their success, relative to the early immersion option.

When comparisons are made, one must bear in mind that there are substantive differences in the student populations and curricula involved. The late immersion student is not simply one who couldn't get into early immersion program. Many of the parents simply did not choose the early option for their children because of strong beliefs about educational matters. Nor can the late immersion students be characterized as a random sample of children who have remained in the traditional English program. For instance, we know that in general they have higher levels of academic and intellectual functioning (Genesee, personal communication). It is likely then that there is a higher degree of

self-selection in the present one-year immersion programs than in the early immersion programs, meaning that one cannot as easily generalize results of evaluation studies for the late immersion as for the early immersion programs. Thus, although early immersion programs have been shown to be suitable for the lower class child, the learning-disabled child, and the child with below average intelligence (Genesee, 1975), the same cannot yet be said of the late immersion programs.

In a comparison of an early and late immersion group, one must also take into account curriculum differences--especially at the grade 7 level. The early immersion group at grade 7 is in fact no longer in a bilingual program. For them, the immersion is partial only from grade 4 on, and the program terminates formally at the end of grade 6. In grade 7 these students take one (with an option for two) course in French and the rest of their study is in English. Thus, this group is on a limited maintenance program, and might even be losing certain French skills developed earlier. On the other hand, at grade 7 the late immersion group has just completed a year with a great deal of second language input. In brief, the comparison of these two groups will be complicated by the factors of recency of French immersion experiences and amount of second language input.

There have been several evaluations to date of late immersion programs at the grade 7 level including two which have compared these students to a group of agemates who attended an early immersion program (Bruck, Lambert & Tucker, 1975; Genesee & Chaplin, 1975). The results obtained by Bruck, et al. were difficult to interpret. Two groups of early immersion students were tested: one at the grade 7 level, another at the grade 8 level. Their performance on a number of French language tests was compared to that of a group of grade 7 late immersion students and to a group of native French speaking agemates. These early immersion students were, in fact, the first two groups to have participated in early immersion classes and they had been tested repeatedly, for purposes of evaluation and comparison, every year since 1967 (see Lambert & Tucker, 1972; Lambert & Tucker & d'Anglejan, 1973; Bruck, Lambert & Tucker, in press; Bruck, Lambert & Tucker, 1975; Bruck, Lambert & Tucker, 1974). Because of their status as pilot classes, their attitudes towards testing must have been quite different from those of the one-year immersion students who had never been evaluated in this fashion before.

The results of the study indicated that the early immersion group at grade 8 performed better than the one-year immersion group (also at grade 8) on many of the French language tests, whereas the early immersion group at grade 7 performed no better than, and in certain respects poorer than, the one-year immersion group. Because we could not explain these results (except to allude to jaded attitudes towards testing), we decided this year to replicate the study using different and "fresher" student groups terminating their grade 7 work. Not only were the groups fresher with regard to testing, but they also had profited from trial-and-error adjustments teachers made in the program because of the experiences of the pilot classes.

The present study then will report the results of testing two groups of grade 7 students whose progress has not previously been evaluated. One group had followed the early-immersion option to the end of grade 6 and then moved into a traditional English language high school curriculum (with a French maintenance class) at grade 7; the second group had followed a traditional English curriculum (with a strong FSL component) through grade 6 and then had opted for a one-year intensive French immersion program. We tested these two groups at the end of

grade 7 so as to compare their relative proficiency on a number of French language and English language achievement tests.

METHOD

Subjects

The three groups of pupils tested are described below.

Grade Seven Immersion (7I). These are students following the one-year French immersion option at the seventh grade level. In elementary school their basic instruction was in English with a rather heavy traditional FSL course (approximately 45 minutes per day). In the seventh grade, approximately 70% of their curriculum was taught in French.

There were twenty-three students in this group. All came from anglophone homes and all had attended English language schools through the sixth grade. None of these students had repeated a grade.

Seventh Grade Post Bilingual (7B). These pupils had been part of the early immersion program from kindergarten through grade 6. At grade 7 they followed a traditional English secondary school program, except that they had the option of taking a content subject (social studies) in French. Their curriculum included a special mandatory French language arts course. Thus,

these students were no longer in an immersion program at the time of testing.

There were twenty-four students in this group. All came from anglophone homes, and none had ever repeated a grade. Fourteen had elected to take the two French courses described above while the other ten took only the French language arts course.

The 7I and 7B classes were housed in the same school building.

French Control (FC). This group comprised 21 francophone students who attended a French secondary school in the same neighborhood as the English children. They were also at the grade 7 level.

Description of Tests

A series of tests were administered to provide information about the following: 1) English language skills; 2) Intellectual functioning; 3) French language skills; 4) Language use patterns.

The Advanced form "G" of the Metropolitan Achievement Test (MAT) was used to measure English language skills. Subtests of Word knowledge, Reading, Language and Spelling were given. The Metropolitan Achievement Tests are a graded series

of tests, in multiple-choice format, standardized on large groups of American children. They allow for comparisons of a particular student or group of students with others of the same grade level and age. It should be mentioned that we used the MAT to avoid duplicating the Board's regular testing program.

The Canadian Test of Basic Skills (CTBS) was administered in October 1972 by the School Board when the students were in grade 5. The CTBS is similar to the MAT, but it has been standarized on a Canadian population.

Intellectual Functioning

The Canadian Lorge-Thorndike (CLT) testwas administered by the School Board in January 1974 when the students were in grade 6. This is a group intelligence test with a verbal and non-verbal section, and it has been standardized on a Canadian population.

French Language Skills

Tests were given to measure pupils skills in reading, writing, speaking and understanding spoken French.

French Reading. We were interested in how well students could read and understand both technical and non-technical material. Le Test de Lecture "California",a French adaption of the California Reading Test, was selected to measure reading

comprehension of technical material. It was standardized on a group of Belgian students. For our purposes, we used a subtest called "compréhension et interprétation du texte." We selected this from the highest level (cycle inférieur de l'enseignement secondaire) equivalent to grade 7. The student is asked to read four different articles and to answer a number of questions based on the content of each. The subjects of the four articles were: 1) the history of aluminum; 2) the fishing industry; 3) the history of the telegraph; 4) coats of arms. There were 30 questions in all and students were given 20 minutes to complete the test.

To measure comprehension of non-technical writing, we asked pupils to read an article from La Presse--one of Montreal's French-language daily newspapers. It concerned the well-known French-Canadian entertainer, Yvon Deschamps. The students were then given a series of nine written questions designed to test their comprehension of the article. They were required to write essay-type short answers with the option of rereading the article while answering the questions. All test instructions and questions were given in French. The total possible score was 14.

French Writing Skills. We were interested in assessing both productive and receptive aspects of writing skills.

To examine the students' productive abilities, they were shown a two-minute film loop called "Come Play with Me" (Canadian Film Board). This is a short skit acted out by three people who convey the meaning only through pantomime (i.e., there is no audio). After the film was shown, the students were then asked to write a narrative description of it. Their compositions were scored for both form and content. The following measures were used for the form analysis:

1) Number of spelling errors (orthographe d'usage; mayson, il done);

2) Number of spelling errors for verbs. These were grammatical in nature (e.g., Il les a donné vs. donnés); (e.g., Il donnez vs. donnait);

3) Number of other spelling errors of a grammatical nature (e.g., les fille vs. les filles);

4) Number of verb errors (wrong tense, lack of agreement, wrong auxiliary);

5) Number of incorrect sentence structures (e.g., à cause que vs. à cause de); (e.g., la fille jolie vs. la jolie fille);

6) Number of incorrect genders;

7) Number of inappropriate vocabulary terms (a French word is used inappropriately, e.g., depuis vs. pendant; demeurer vs. habiter);

8) Number of Anglicisms (English words translated into French, but which in fact are not French words, e.g., discourager vs. décourager);

9) Number of English words;

10) Total number of errors.

Each of these error types was divided by the total number of words in the composition. Thus, for each of the above categories each student received two scores: raw score (e.g., total number of errors with gender) and a ratio score (e.g., gender errors/total words in composition). This latter score was used to control the length of composition.

The following measures were used in the content analysis. A list of the 10 most important details of the film was compiled. Each composition was examined to see how many of these 10 basic details were reported. Eighteen minor details were also listed and these, too, were counted.

The number of compositions that had an (a) introduction; (b) conclusions, and (c) title were counted. Finally, we counted the number of students who embellished their compositions by adding narrative that did not take place in the film.

Two research assistants who had seen the film scored each composition separately. They then compared their scores for each student, correcting any existing discrepencies.

A proof reading exercise was given to measure receptive writing skills. Sixteen sentences each of which contained one spelling, placement, verb form and gender error were presented to the students. They were told that the sentences contained errors and they were to find and correct as many as possible.

The sentences were scored in the following way:

1. Number of accurate corrections made;
2. Number of inaccurate corrections made (an incorrect form, e.g., tout les filles, was changed to another incorrect form, touts les filles);
3. Number of errors ignored;
4. Number of correct forms changed which resulted in errors;
5. Number of mistakes acknowledged but not corrected;
6. Number of correct forms changed which resulted in other correct forms.

These were tabulated separately by category (place, verb, gender, spelling). There were very few entries for categories 5 and 6. Hence, no formal statistical analyses were performed.

French Speaking Skills. Four short job descriptions (like those found in classified ads) were written and shown to each student with the following instructions: "You are to read these ads and select one job for which you would like to apply for summer employment. In a short while, you will be interviewed

for this job." These instructions were given in French. Each student was then interviewed individually by a francophone research assistant. Each student was asked the following questions:

1. Quel emploi as-tu choisi?

2. Quel âge as-tu?

3. Est-ce que tu as déjà fait ce genre de travail? Où? Quand?

   Si non, a) T'es-tu déjà occupé(e) d'un jeune enfant?

   N'as-tu jamais aidé aux travaux domestiques?

   b) As-tu déjà coupé le gazon?
   lavé des fenêtres?
   nettoyé le terrain?

   c) N'as-tu jamais mis la table?
   desservi?

4. Peut-tu me donner le nom de quelques personnes avec qui je pourrais communiquer pour avoir des références?

5. Pourrais-tu commencer à plein temps tout de suite?

   Si oui, Qu'arriverait-il de tes études?

   Si non, Pourquoi pas?

6. Serais-tu prêt(e) à habiter chez ton employeur ou préférerais-tu retourner chez toi tous les soirs?

   Est-ce que ce serait trop loin pour voyager tous les jours?

7. Combien voudrais-tu de jours de congé par semaine?

8. Combien penses-tu devoir gagner par semaine?

9. Peux-tu me donner le numéro de téléphone où je pourrais t'atteindre. A quelle heure devrais-je t'appeler?

Dites-leur que les offres d'emploi ne sont pas véritables et demandez-leur quels sont leurs projets d'été.

All interviews were recorded. These were then transcribed and scored in two different ways: objective ratings and subjective ratings. The following is a description of the objective measures taken.

1) The number of questions that the student did not understand. This was inferred when the student gave an inappropriate response (e.g., How much do you want to make an hour? $20.00, on further repetition, he said $2.50);

2) The number of questions that the interviewer had to repeat because the student asked him to repeat them or the student did not supply enough information to satisfactorily answer the question;

3) The number of English words the student used in the interview?

4) The number of one word answers that the student gave. This score was expressed as a ratio of the number of questions the interviewer asked the student.

These analyses were performed by the person who did the actual interview.

The following is a description of the subjective ratings. Two French Canadian undergraduates (one male, one female) who

had no knowledge of the project, but were familiar with the educational options available to Quebec anglophone youngsters, were asked to listen to each interview and to make the following judgments.

1- L'étudiant comprend les questions que l'interviewer lui a posées:

oui, parfaitement	la plupart du temps	quelques	rarement	pas du tout

2- L'étudiant semblait:

très à l'aise				mal à l'aise

3- Quant au numéro de téléphone, est-ce que l'étudiant:

_____ répondait naturellement et vite

_____ semblait hésiter comme s'il devait traduire le numéro (de téléphone) de l'anglais au français

4- Evaluez la facilité d'expression de l'étudiant:

français courant				difficulté d'expression en français

5- Selon vous, est-ce que l'étudiant est:

_____ francophone

_____ anglophone (avec un an d'immersion français)

_____ anglophone (avec plusieurs années d'immersion français)

French Listening Skills. Two different tests were used to measure listening skills, one a listening comprehension test, the other a test of sensitivity to the sound patterns of French.

For purposes of testing French listening comprehension we used a news broadcast taped from an actual program on Radio-Canada's French-language station. Interspersed with each news item was a set of multiple choice questions designed to reflect the student's comprehension of the news segments which had directly preceded. Each question had three response alternatives, one of which was correct. In all cases the choices were mutually exclusive. The tape was played only once. Thirty-second pauses followed each question to allow students to indicate their response on the answer sheet. The number of questions answered correctly, out of 13, constituted the score.

We also examined the student's sensitivity to the sound system of the French language. This study was a partial replication of an honours thesis written by Michael del Balso (1975). Students listened to a series of tape-recorded phoneme sequences (CCVC) and were asked to indicate the "linguistic distance" of each from French by making a vertical mark anywhere on an ungraduated 17 cm scale ranging from "près du français" to "loin du français." The students rated 24 different phoneme sequences

which were chosen to represent six distinct linguistic distance categories from French (see D'Anglejan, Lambert, Tucker & Greenberg, 1971).

The phoneme sequences were tape-recorded by a French linguist. Each sequence was pronounced twice with a three second interval between repetitions and a fifteen second interval between different phoneme sequences.

Numbers were assigned to the subjects' responses by superimposing a 17 cm rule on the ungraduated rating scales. Mean distance values were obtained for each sequence. These were then grouped according to the six previously defined linguistic distance categories for subsequent statistical analysis.

Test of General French Language Arts Achievement We administered the Test de Rendement en Français to the 7B and 7I pupils in December, 1975. This is a discrete-point test of French language skills developed and normed yearly by the Bureau de l'Evaluation of the Commission des Ecoles Catholiques de Montréal. The test was intended for native speakers at the Secondary 1 level. The test comprised 35 multiple choice items which probed the students' ability to read sentence or paragraph-length material, and skills such as their knowledge of parts of speech and grammatical structure.

Language Use. Each 7B and 7I student was individually interviewed in English to obtain detailed information about his use of French and English both in and out of school. The following questions were asked:

1. Why is it necessary to learn French?
2. Do you have any friends who speak French? What do you speak to them?
3. Do you engage in any extra curricular activities which are conducted in French?
4. Do you go to plays or movies in French?
5. Do you watch French T.V.?
6. Do you ever use French when you go into a store? To ask directions? To answer the telephone?
7. Would you consider going to an all-French high school with only French-speaking students? If not, Why?

All interviews were tape-recorded and then transcribed for further analyses.

Testing Program

The 7B and 7I students were administered all the above tests. The FC students were given all the tests described in the French skills section except for the job interview and the Test de Rendement.

Most testing was done in June, 1975. In addition, in December, 1975 the 7B and 7I students (who were then in 8th grade) were given the Test de Rendement en Français. CTBS scores and CLT scores were obtained from the students' permanent record cards. These tests had been given to the students by the School Board several years prior to our testing program.

Results and Discussion

English Language Skills

CTBS (The Canadian Test of Basic Skills). One-way analyses of variance were run for each of the subtests of the CTBS. The independent variable was group composition (7B vs. 7I) and the dependent variable was the standard score on the specific subtest. The subtest group means are summarized in Table 1, item 1 - 5. Note that the 7I children performed better than the 7B children on two of the four subtests, and on the composite score.

MAT (Metropolitan Achievement Test). The standard score means for each subtest are presented in Table 1, items 6 - 10. The results for the one-way analyses of variance indicated that there were no significant differences between the 7I and 7B groups on any of these subtests.

Insert Table 1 about here

Intellectual Functioning

The mean scores for the Canadian Lorge-Thorndike (CLT) nonverbal, verbal, and total I.Q. for the 7B and 7I groups are presented in Table 2. Three separate one-way analyses of variance indicated that the 7I group scored higher than the 7B group on the nonverbal subtest and on the total test. There were no significant differences on the verbal subtest.

Insert Table 2 about here

The pattern of results for the CTBS, MAT and CLT tests are quite interesting but they must be interpreted with care. First it appears that the 7I group performed better than the 7B students on a group I.Q. test. This difference does not indicate that early immersion programs cause lower I.Q. scores. On the contrary, all past evaluations of early immersion programs have consistently found that these programs have no detrimental effects whatsoever on the students intellectual functioning. Rather, the present results do seem to suggest that very select students have gone into this one-year immersion program. This possibility is supported by the results of the CTBS for in this

case as well the 7I students, in elementary school, performed better on achievement tests than the 7B students. Thus it seems likely that very special students have gone into the one-year immersion program, students who are above average in intellectual development and in academic achievement.

Other researchers have noted the same trend. In last year's report (Bruck, Lambert & Tucker, 1975) we reported that the 7I students performed better than the 7B students on many academic achievement tests. Genesee (Personal communication) has recently compared the I.Q. scores of English-speaking sixth graders who planned to take the one-year immersion option and others of the same age who were not planning on grade 7 immersion. The immersion groups, Genesee found, has reliably higher I.Q. scores.

The results of the Metropolitan are more difficult to interpret. Here there were no group differences despite the fact that on a similar test, the CTBS, given several years earlier, differences favoring the 7I group were found. In our view, it would be wrong to make either of the following conclusions based on these findings:

1. That the 7I group perform worse than they did two years ago, implying that the one-year program had retarded their rate of learning; or

2. That the 7B group perform better than they did two years ago, implying that the increase in English instruction had also increased their scholastic achievement.

Both explanations are speculative at best, and both could be false. To better understand this pattern of results, one would have to administer alternate forms of the same achievement test (CTBS or MAT) to these students every year from kindergarten until the end of grade 7. In other words, the results of the tests of English language skills and of intellectual functioning are more indicative of the type of student likely to be found in the 7I and 7B programs, than of the effects that such programs have on pupils' skills and abilities.

French Language Skills

Reading. The mean scores for the 7I, 7B and FC groups on the "Test de Lecture California" and the "La Presse" test are presented in Table 3, items 1 and 2. On the "California" test, the FC group performed significantly better than then 7I and 7B groups and the 7I and 7B groups performed at about the same level. On the "La Presse" test the FC students performed significantly better than the 7Bs who in turn performed better than the 7Is.

Insert Table 3 about here

On the two reading tests, the two English language groups did not reach the same level of reading competence as did their francophone agemates. Furthermore, in a test requiring comprehension of technical material (the California test), the two English based groups performed similarly, while on a test of more "common interest" prose, the 7B group performed better than the 7I. The 7I group had just completed a school year during which they were required to read much material similar to that found on the California test, and they were probably quite accustomed to doing such exercises. However, they seemed less able to cope with the human interest article, and much less so than the early-immersion students.

Speaking Skills

Three judges (Rater A, Rater B, and the interviewer) analyzed the speaking skill data, both objectively and subjectively. So as to better understand the relationships among the various scores assigned to the speakers, the following variables were factor analyzed:

1. Rater A: How well does the subject understand? (Subjective rating)

2. Rater B: How well does the subject understand? (Subjective rating)

3. Rater A: How confident does the subject sound? (Subjective rating)

4. Rater B: How confident does the subject sound? (Subjective rating)

5. Rater A: How fluent is the subject's French? (Subjective rating)

6. Rater B: How fluent is the subject's French? (Subjective rating)

7. How many questions did the subject <u>not</u> understand? (Objective rating)

8. How many questions did the interviewer repeat? (Objective rating)

9. How many English words did the subject use? (Objective rating)

10. How many yes/no or one-word answers did the subject give? (Objective rating)

Three factors, accounting for 68% of the variance, were extracted (see Table 4 for factor loadings). Briefly, this analysis indicated:

Insert Table 4 about here

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1. That the raters' estimates of a student's confidence and fluency were correlated with the number of one-word answers that the student gave (i.e., if he was rated as being fluent and

confident, this was associated with giving a small proportion of one-word answers).

2. That the raters' estimates of how well the student understood the questions was inversely related to the number of times the interviewer had to repeat the questions;

3. That there was a positive relationship between the number of questions not understood and the number of English words used by the child in the interview.

The speaking skill data were subsequently analyzed in various ways. The objective ratings were treated to a series of one-way analyses of variance to compare the performance of the 7I and 7B students. The subjective ratings were tested with the chi-square statistic in the cases of: How quickly does the student give his telephone number? and Is the student anglophone or francophone? The three other subjective measures were tested by means of analyses of variance, with rater (rater A vs. rater B) and group (7B vs. 7I). The results for these tests are presented in Table 3, items 3 - 11.

On the objective ratings, the 7B students understood more questions, needed fewer repetitions and gave fewer one-word replies than did the 7I students group. There was no difference between the two groups on the number of English words used in the interview.

On the subjective ratings, the two interviewers rated the 7B students as understanding more of the interview, being more confident and more fluent than the 7I students.

There were no significant interviewer effects (i.e., interviewer A did not give consistently higher or lower ratings than interviewer B) for any of the ratings. However, there was one significant interaction for the confidence scale ($F = 3.92$; $df = 2,45$ $p < .05$). Here it appeared that rater 1 did not differentiate between the two groups to the same extent as rater 2.

On the two X^2 analyses, both raters found that more 7B students responded rapidly when asked to give their telephone numbers than did the 7I students. When asked to classify the students according to language background, none were misidentified as francophones. There were slight discrepancies between the raters in terms of their assignment of the students to the 7B or 7I category. In general, however, most students in both groups were classified as having had only one year of immersion although this was less true for the 7B students. Keep in mind that these raters had no first-hand experience with either type of immersion program; their estimates on this point then are instructive mainly because they reflect what native speakers of French would expect show as a result of a year or more of immersion experience.

Listening Skills

Listening Comprehension. On the CBC news broadcast test, the FC children performed better than the 7B children who performed better than the 7I children (see Table 3, item 12).

Sound Sensitivity Test. A two-way analysis of variance with repeated measure was run on these data. The independent variables were group (7I, 7B, FC) and linguistic category (I through VI). The dependent variables were the subjects' rating, using the 17 cm scale, of how close each sound was to French. Both main effects were significant (group: $F = 7.51$; $df = 2,65$, $p < .001$), categories ($F = 143.62$; $df = 5,325$, $p < .001$). More importantly, there was a significant group by category interaction ($F = 11.50$; $df = 10,325$, $p < .001$). Figure 1 shows this interaction graphically. Basically, these results suggest that:

Insert Figure 1 about here

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1. For all categories except category 1 (the real French words) the FC group rated all sounds as being farther from French than did the 7I and 7B group. The 7B group in turn rated the sounds as being further from French than did the 7I group.

2. In general, the category 1 sounds were rated as being closer to French than the category 2 sounds, than the category 3 sounds, etc.

3. The 7B group's ratings were closer to those of the native speakers than were the 7I group's ratings.

These results then indicate that the two English groups do differ in terms of their sound sensitivity to French. The group of students having more exposure to French (7B) performed more like the French control group than did those with less exposure to French (7I). These results replicate those of del Balso (1975).

Writing Skills--Compositions

The compositions written by the 7B and 7I students were analyzed in terms of form and content. With regard to form, nine statistical analyses were performed (see Table 3, items 14 - 20). There was significant variation among the groups on 6 of the analyses. On each of these measures, the FC pupils consistently had a lower proportion of errors than the 7B or 7I students. They also used fewer English loan words in their compositions than the anglophones. In general, the 7B students made fewer errors than the 7I students. They did, however, use more English loan words in their compositions.

With regard to content, there was no significant difference among the groups in terms of the number of major details included in the stories; but the FC pupils did include, on the

average, more minor details than the 7B or 7I pupils. Approximately equal numbers of pupils from each of the groups provided a context and an introduction for their compositions (Table 3, item 23). Few children from any group provided titles for their stories (item 25), and few fabricated additional details or otherwise amplified the content of their stories beyond the material provided in the film loop (item 26). There was one significant difference among the groups which involved a tendency on the part of relatively more FC than 7B or 7I children to provide formal conclusions to their stories.

In summary, the most striking finding of the "content" analysis was the general similarity among the members of the three groups.

Writing Skills--Proofreading

Sixteen one-way analyses were performed on these data. The independent variable was group membership (7B, 7I, FC), and the dependent variable was the number of accurate corrections, inaccurate corrections, errors ignored, or correct forms wrongly changed. There was significant variation among the groups on 11 of the 16 analyses (see Table 5). In every one of these cases, the FC performed best followed by the 7B group and then the 7I group. In general, all students found the errors of verb tense

and spelling hardest to detect or to correct, whereas errors of placement were easiest to detect.

Insert Table 5 about here

Test de Rendement en Français. The 7B students ($\bar{X}$ = 17.6) performed significantly better (F = 4.45, df = 1,33, $p < .05$) than the 7I students ($\bar{X}$ = 15.0) on this demanding test designed for native speakers. The CECM has not yet released the stanine equivalent for this year's testing so we can not yet locate these students with respect to their French-speaking agemates.

In summary, the results of the various tests of French language skills indicated that there were differences in language proficiency between late and early immersion students. These differences appeared on tests of reading, writing, speaking and listening. Although neither group of students performed at the same level as the francophone controls, where the early immersion students, however, generally performed better than the later immersion students.

Language Use Questionnaires

No statistical analyses were performed on these data. We were not so much interested in differences between the 7B and 7I groups as we were in describing how these children use French

outside of school. In general, the results of these orally administered questionnaires showed that the two groups of students use little French outside of school. For example, although 83% of the 7I and 88% of the 7B children report that they have French friends, it appears on closer inspection that most are really "acquaintances" with whom they have little contact. Specifically, when they were asked about children with whom they play or meet more than a few times a year, only 17% (7I) and 38% (7B) of the students report having French friends. Furthermore, when asked what language they speak to these friends and acquaintances only 35% (7I) and 33%(7B) say they speak mainly French. The rest report mainly English or a mixture of the two.

Very few of the students participate in outside activities where French is required (57%, 7I and 46%, 7B). The main activity where French is used is sports. However, only 21% of the students in either group report that they speak only French when they are engaged in sports with French-speaking youngsters. The others report that they speak English, some French, or some French only when necessary.

Only 22% (7I) and 33% (7B) of the children report that they have gone to French movies. A larger number reported that they watch French TV: 75% (7I) and 83% (7B). However, half of

these reported that they watch French TV only once a week on the average. Of those most said they watched cartoons or sports (two programs which presumably require little understanding of the language for comprehension of the program).

Insert Table 6 about here

The students also replied that they would use French in a store only if necessary (68%, 7I and 75%, 7B), would give street directions in French only if the person clearly did not understand English (58%, 7I and 45%, 7B), and would never use French on the phone (78%, 7I and 58%, 7B).

When asked if they would consider going to a French school, two 7I and four 7B students said yes. The following reasons were given by the other students for not wanting to go: it would be too difficult academically because they didn't know enough French (60%, 7I and 37%, 7B); they wanted to be in the same school as their friends (55%, 7I and 41%, 7B); they have had enough French (0%, 7I and 27%, 7B).

The information from this questionnaire suggests that the students attending the immersion programs have compartmentalized their use of the two languages. French has become a language for school activities while English remains the language for most

other activities. Although this is not true for all children, the trend is great enough to deserve attention. It is not clear why this is so. St. Lambert is a community where 60% of its inhabitants are French. Therefore, it is not the case that these students have no opportunity for linguistic contact.

General Discussion

The results from this study raise a number of interesting questions concerning these two innovative approaches to the development of second language skills. Our data indicate that the students who have followed the early immersion program have in general achieved a level of French proficiency which exceeds that reached by students who take the later, one-year program. In fact, when one takes account of the facts that the early immersion group studied represents a much broader range of scholastic and intellectual abilities (as measured by tests of intelligence) than the more select students who entered the later immersion option, that the later group had at the time of testing just finished an intensive all-French year whereas the early immersion students were down to a minimum of French input, the generally higher level of French language skill of the early immersion group is all the more impressive. However, on this

basis of the present analysis we can not state explicitly the ways in which the linguistic abilities of the two groups differ nor can we speculate in any informed way about the ways in which these students will generalize their immersion experiences during the remainder of secondary school as the amount of French-language input is reduced. In other words, we need to follow other groups through the two forms of immersion and check the reliability of the present findings as well as explore more deeply their relative competence. We are planning both a replication and similar comparisons of groups who get to the end of their secondary schooling.

It would be misleading to conclude on the basis of the present data that the later immersion program does not constitute a viable alternative for many parents. Many unanswered questions remain. Are the later immersion programs suitable for all children (see, for example, Genesee, 1975) or are they suitable only for those from relatively high I.Q., upper middle class backgrounds? Investigations conducted to date have not addressed themselves to such questions. It would seem premature at this time to endorse one program alternative as opposed to the other; rather it would seem desirable to continue to experiment with a variety of programs in an attempt to find the best possible form

or forms of second language training suitable for the greatest number of Quebec youngsters in the Quebec of the 1970's.

FOOTNOTE

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Table 1

ENGLISH SKILLS

Test	Date	Subtest	7I (N=23)	7B (N=24)	F	df
CTBS	Fall 1972	1) Vocabulary	70.39	68.13	.66	1,45
		2) Reading	70.48	66.13	1.60	1,45
		3) Language	69.91	62.88	3.99*	1,45
		4) Working study skills	74.57	66.13	7.65**	1,45
		5) Composite	70.83	64.42	5.37*	1,45
MAT	June 1975	6) Word knowledge	95.78	101.88	3.03	1,45
		7) Reading	100.30	101.83	.17	1,45
		8) Total reading	99.57	103.92	1.72	1,45
		9) Language	106.44	101.54	2.88	1,45
		10) Spelling	101.04	105.08	1.90	1,45

** indicates $p < .01$.
* indicates $p < .05$.

Table 2

INTELLECTUAL FUNCTIONING

Test	Date	Subtest	7I	7B	F	df
CLT	January 1974	Nonverbal	124.35	114.46	6.93**	1,45
		Verbal	113.13	107.63	2.40	1,45
		Total	118.65	110.58	5.97*	1,45

** indicates $p < .01$.
* indicates $p < .05$.

Table 3

FRENCH LANGUAGE SKILLS

Test	Subtests	7I (N=23)	7B (N=24)	FC (N=22)	F	df
1) California Test de Lecture		18.74	20.13	23.36	10.24**	2,66
2) La Presse		2.61	4.25	8.02	40.47**	2,66
Speaking Skills Objective	3) Questions not understood?	.39	.04		3.61*	1,45
	4) Questions repeated?	.57	.08		5.90**	1,45
	5) English words?	.02	.25		1.23	1,45
	6) Single word answers ÷ Total questions asked?	1.06	.92		3.81*	1,45
Speaking skills Subjective	7) How well does subject understand?	4.32	4.85		27.38**	1,45
	8) How confident does speaker sound?	2.74	3.78		23.21**	1,45
	9) How fluent does he sound?	2.50	3.19		13.57**	1,45

Table 3 (cont.)

Test	Subtests	7I (N=23)	7B (N=24)	FC (N=22)	Σ	df
	10) Does he give telephone number quickly?	15	22		$X^2=4.905$*	1
	with hesitation?	8	2			
	11) Is student					
	) francophone:	0	0			
Rater A)	anglophone in 7I:	22	15		$X^2=6.26$*	2
	) anglophone in 7B:	21	9			
	) francophone:	0	0			
Rater B)	anglophone in 7I:	19	14		$X^2=2.56$	2
	) anglophone in 7B:	4	10			
12) CBC		4.35 ——	5.63 ——	7.41	12.44*	2,66
13) Test de Rendement		15.0	17.6		4.45*	1,33
Composition Form[a]						
14) Erreurs d'épellation		.73	.65 ——	.51	9.10**	2,72
a. Verbes		.39	.35 ——	.14	20.15**	2,72
b. Terminaisons et autres mots		.58	.52	.51	1.21	2,73
15) Erreurs de grammaire		.54	.36	.43	2.85	2,71

[a]Entries represent, for example, the number of spelling errors divided by the number of words in a respondent's composition. Before analysis, the resulting proportions were first normalized by means of an arc-sin transformation.

Table 3 (cont.)

Test	Subtests		7I (N=23)	7B (N=24)	FC (N=22)	F	df
16)	Structure de phrases: (erreurs)		.28	.16	.07	16.06**	2,72
17)	Erreurs de genre: (articles, etc.)		.32	.21	.01	30.64**	2,72
18)	Vocabulaire (erreurs)		.32	.15	.12	14.60**	2,71
19)	Nombre d'Anglicismes		.43	.49	.71	1.97	2,72
20)	Nombre de mots Anglais		.06	.07	.00	5.46**	2,72
	Content						
21)	Major details		7.48	7.29	7.79	1.01	2,73
22)	Minor details		10.83	10.63	12.45	5.06**	2,73
23)	Introductions	Yes	14	14	22	X^2=2.44	2
		No	9	10	6		
24)	Conclusions	Yes	4	3	17	X^2=17.04**	2
		No	19	21	11		
25)	Title	Yes	10	6	5	X^2=3.91	2
		No	13	18	23		
26)	Fantasies	Yes	6	3	5	X^2=1.79	2
		No	17	21	18		

Note
** indicates $p < .01$.
* indicates $p < .05$.
Entries joined by line differed reliably on the Newman-Keuls Multiple Comparison Test.

Table 4

FACTOR ANALYSIS OF JOB INTERVIEW DATA

Variable	Variable Name	1	2	3
1	How well does subject understand? (Rater A)	.24	.64	-0.17
2	How confident does the subject sound? (Rater A)	.87	.15	-0.12
3	How fluent is subject's French? (Rater A)	.76	.06	-0.06
4	How well does the subject understand? (Rater B)	.10	.96	-0.01
5	How confident does the subject sound? (Rater B)	.76	.29	-0.01
6	How fluent is subject's French? (Rater B)	.73	.21	.03
7	How many questions did the subject not understand?	-0.30	-0.28	.65
8	Number of repetitions?	.00	-0.64	.09
9	Number of English words?	.04	-0.01	.53
10	One word answers ÷ total questions?	-0.40	.15	.09

Table 5

PROOF READING CORRECTIONS

	7B	7I	FC	FF	df
PLACEMENT					
Number of accurate corrections (out of 16)	7.16	3.24	13.12	64.89**	2,68
Number of inaccurate corrections	1.52	1.33	0.76	2.51	2,68
Number of errors ignored	7.08	11.38	2.04	54.64**	2,68
Number of correct forms wrongly changed	.56	.20	.62	3.09	2,68
VERB TENSE					
Number of accurate corrections (out of 16)	3.56	1.67	9.24	121.61**	2,68
Number of inaccurate corrections	3.36	2.43	3.36	1.94	2,68
Number of errors ignored	8.76	11.90	3.40	59.45**	2,68
Number of correct forms wrongly changed	1.36	3.52	0.20	56.59**	2,68
GENDER					
Number of accurate corrections (out of 16)	2.40	1.19	12.24	213.07**	2,68
Number of inaccurate corrections	.04	.00	.16	not computed	
Number of errors ignored	13.56	14.81	3.60	213.11**	2,68
Number of correct forms wrongly changed	2.56	1.91	.28	16.05**	2,68
SPELLING					
Number of accurate corrections (out of 19)	5.12	4.00	10.16	30.31**	2,68
Number of inaccurate corrections	1.28	1.62	2.04	2.71	2,68
Number of errors ignored	12.32	13.29	6.76	30.68**	2,68
Number of correct forms wrongly changed	2.08	4.62	0.40	19.90**	2,68

Note

** indicates $p < .01$.

Entries joined by line differed reliably on the Newman-Keuls Multiple Comparison Test.

Table 6

LANGUAGE USE INFORMATION

	7I			7B		
	f	N	%	f	N	%
1) Have French friends	19	23	83	21	24	88
2) Have close French friends	11	23	17	9	24	38
3) With friends*						
speak mainly French	8	23	35	8	21	38
speak mainly English	7	19	37	8	21	38
half English, half French	1	19	5	3	21	14
speak French, friends speak English	3	19	16	3	21	14
speak French only when necessary		-		2	21	10

*For these percentages the denominator is the total number of subjects in the group.

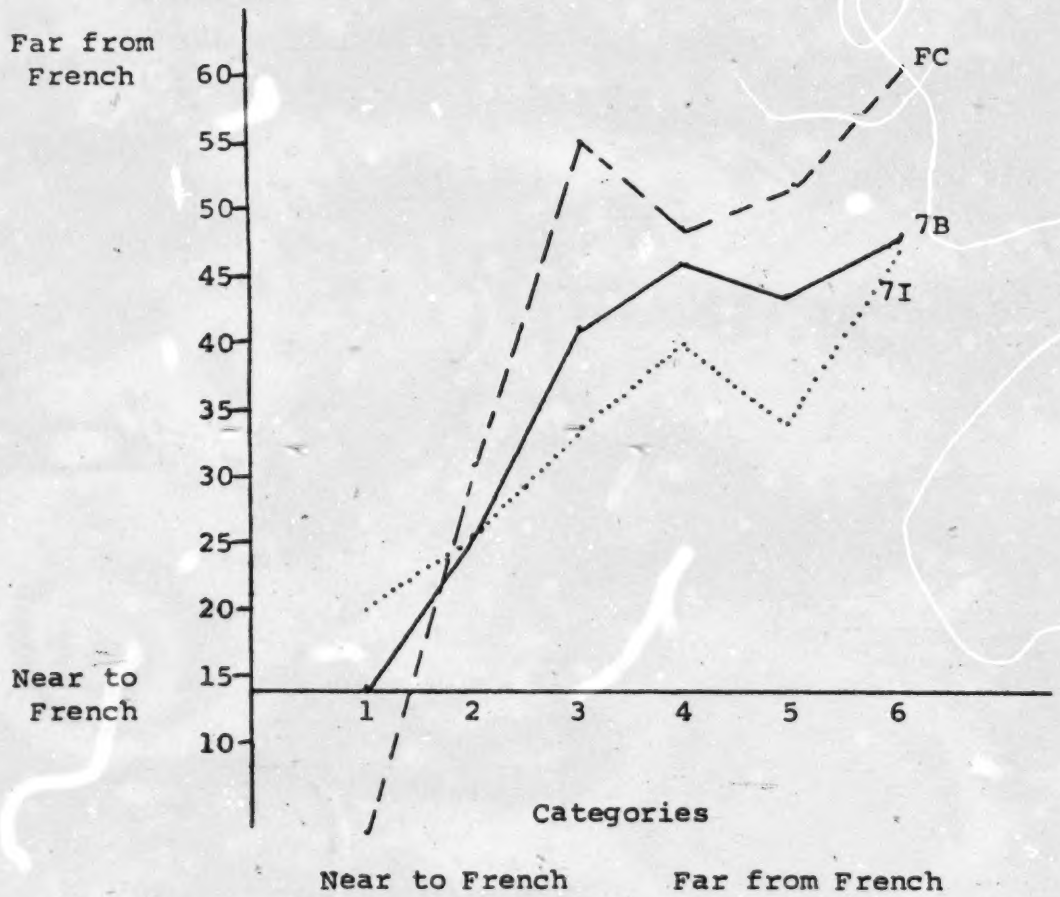
Table 6 (cont.)

	7I			7B		
	f	N	%	f	N	%
Use French to give directions only if necessary	11	19	58	10	22	45
French in store only if necessary	15	22	68	18	24	75
On phone only if necessary	4	23	17	6	24	25
Never use French on phone	18	23	78	14	24	58
Would you consider going to a French school?						
Yes	2	23	9	4	24	17
No	21	23	91	20	24	83
Why not?						
Academic			50			32
Social			55			41
Don't know French well enough			10			5
Have had enough French			0			27
Wants the English			15			5

Table 6 (cont.)

	7I			7B		
	f	N	%	f	N	%
Outside activities involving French						
Yes	12	23	57	11	24	46
Speak						
mainly English	4	13	31	2	11	18
mainly French	5	13	38	5	11	45
half and half	2	13	15	3	11	27
translate for coach	–			2	11	18
subject speaks French Francophone speaks English	2	13	15	–		
go to French movies	5	23	22	8	24	33
Watch French TV						
Yes	17	23	74	20	24	83
only once a week	11	17	65	11	20	55
two to four times a week	5	17	29	6	20	30
daily	–			2	20	10
a lot	1	17	6	1	20	5
watch sport	7	17	41	9	24	38
cartoons	1	17	6	3	5	60

Figure 1


Far from French
Near to French
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